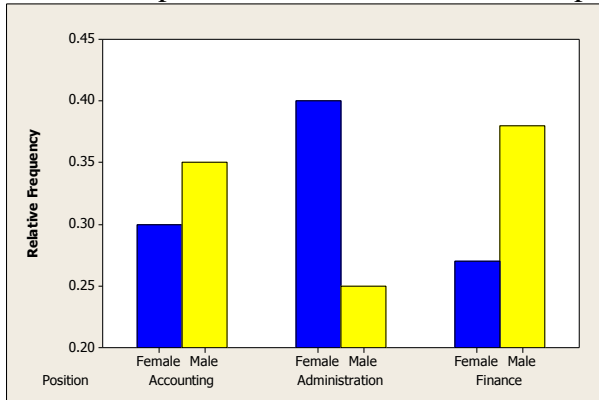


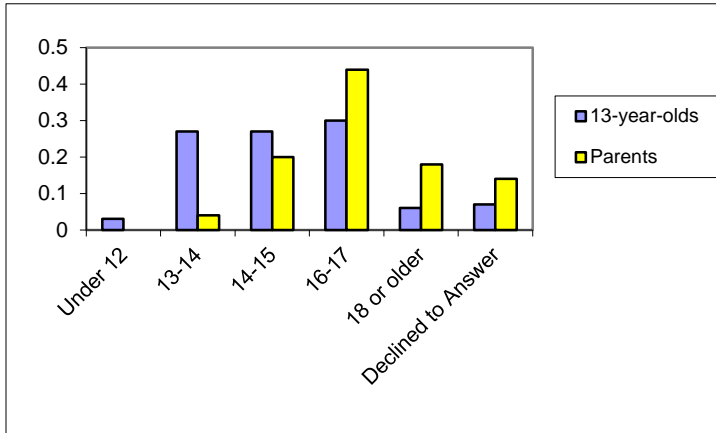
Chapter 3 AP MC Questions

1. The comparative bar chart shown here is potentially misleading because



- A. frequency, not relative frequency, should have been used for the vertical axis.
- B. the vertical axis does not start at zero.
- C. the three female bars should appear next to each other and the three male bars should appear next to each other.
- D. the vertical axis has increments of 0.05 instead of 0.10.
- E. two separate bar charts should have been used.

2. Time magazine carried out a national online poll of 501 13-year-olds. One question asked 13-year-olds what age they thought it was appropriate for them to begin dating, and another question asked at what age their parents thought it was appropriate for them to begin dating. The results are shown in the comparative bar chart below. Based on this graph, which of the following statements is correct?



- A. The proportion of parents is higher in the 16-17, 18 & older, and the declined to answer categories than the proportion of 13-year-olds.
- B. The proportion of parents who believe it is appropriate for their child to start dating at age 12-13 is higher than the proportion of 13-year-olds who believe this.
- C. A smaller proportion of 13-year-olds than their parents believe it is appropriate for them to start dating when they are under 12 years of age.
- D. The same proportion of 13-year-olds and their parents believe it is appropriate for them to start dating when they are 16-17 years of age.
- E. Parents and children generally agree on when it is appropriate to begin dating.

3. The stem-and-leaf display below shows the service times (in seconds) for a sample of 25 customers at Frank's Hotdogs.

Leaf Unit = 1.0

```

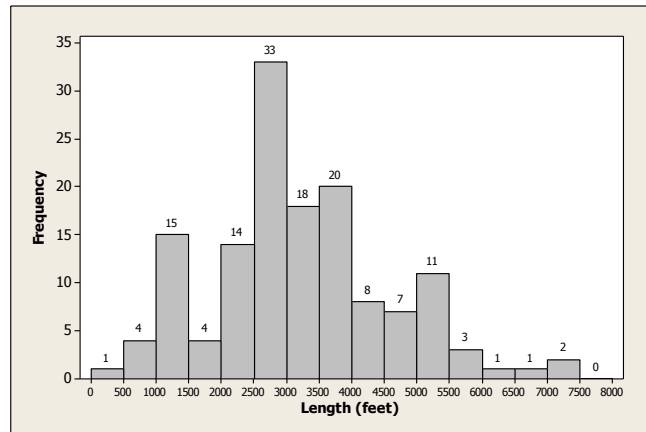
8   0113467789
9   1233
10  245
11  34
12  05
13  23
14
15  9
16
17
18
19
20  0

```

The smallest value in the data set corresponds to what value?

- A. 80 seconds
- B. 8 seconds
- C. 0 seconds
- D. 0.8 seconds
- E. 0.08 seconds

4. The lengths (in feet) of 142 roller coasters are summarized in the following histogram.



What is the proportion of roller coasters with a length less than 2500 feet?

- A. 0.500
- B. 0.38
- C. 0.268
- D. 0.232
- E. 0.099

5. Which of the following stem-and-leaf plots corresponds to the data distribution that is negatively (left) skewed?

I.

Leaf Unit = 0.10

1	467789
2	23557
3	2256
4	0238
5	08
6	011
7	7

II.

Leaf Unit = 0.10

4	8
5	3569
6	01789
7	1222778
8	02567
9	16
10	1

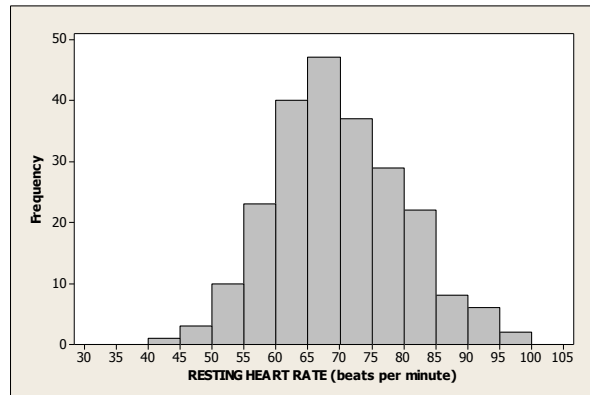
III.

Leaf Unit = 0.10

3	3
4	8
5	35
6	1789
7	22778
8	0567
9	16678
10	1234669

- A. I only
- B. II only
- C. III only
- D. I and III only
- E. None of these stem-and-leaf plots is negatively skewed.

6. The resting heart rates (in beats per minute) of 228 adults are summarized in the histogram below.



Which of the following values best describes the typical resting heart rate in this sample?

- A. 48 beats per minute
- B. 60 beats per minute
- C. 65 beats per minute
- D. 75 beats per minute
- E. 80 beats per minute

7. The frequency distribution shown summarizes data on the percentage of college students enrolled in public institutions for the 50 U.S. states.

Percentage Enrolled	Frequency
40 - < 50	1
50 - < 60	5
60 - < 70	2
70 - < 80	11
80 - < 90	25
90 - < 100	6

What is the relative frequency for the 50 - < 60 interval?

- A. .05
- B. .10
- C. 5
- D. 10
- E. 50

8. If a frequency distribution is based on intervals of unequal widths, the vertical axis used to construct the corresponding histogram must use which of the following?

- A. a frequency scale
- B. a relative frequency scale
- C. a density scale
- D. either a frequency or a relative frequency scale can be used
- E. a frequency, a relative frequency, or a density scale may be used

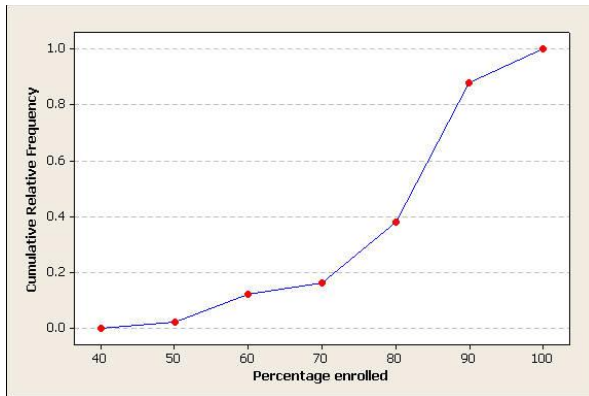
9. The frequency distribution shown summarizes data on the percentage of college students enrolled in public institutions for the 50 U.S. states.

Percentage Enrolled	Frequency
40 - < 50	1
50 - < 60	5
60 - < 70	2
70 - < 80	11
80 - < 90	25
90 - < 100	6

What is the cumulative relative frequency for the 50 - < 60 interval?

- A. .05
- B. .06
- C. .12
- D. 5
- E. 6

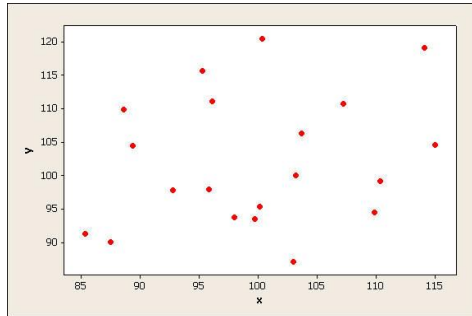
10. The cumulative relative frequency plot shown was constructed using data on the percentage of college students enrolled in public institutions for the 50 U.S. states. Which of the following is closest to the approximate proportion of states that have fewer than 60 percent of college students enrolled in public institutions?



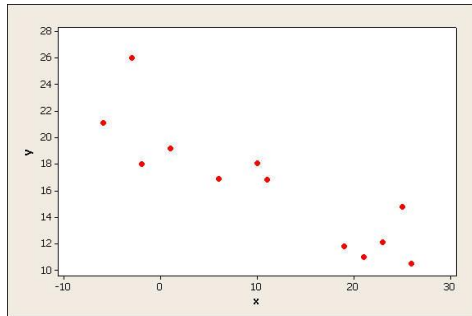
- A. 0
- B. .20
- C. .40
- D. .60
- E. .80

11. Which of the following three scatterplots suggest that there is not a relationship between the two variables used to construct the plot?

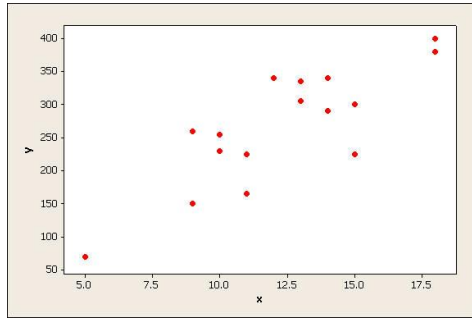
I.



II.

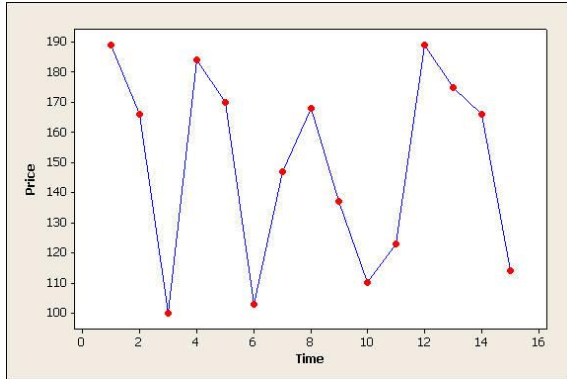


III.



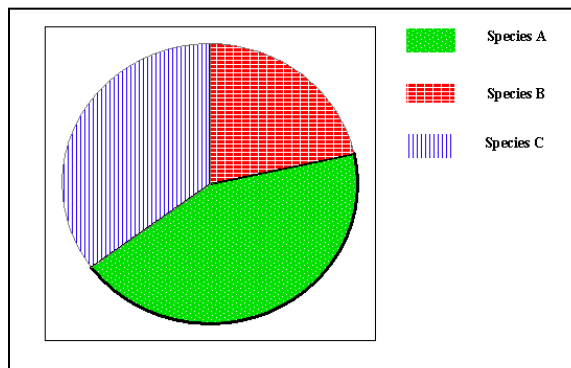
- A. I only
- B. II only
- C. III only
- D. I and II only
- E. II and III only

12. Which of the following best describes the time series plot below?



- A. There is a positive linear relationship.
- B. There is a negative linear relationship.
- C. There is an upward trend over time.
- D. There is a downward trend over time.
- E. There is no apparent long-term trend.

13. In a study of the birds in a national park, three species (labeled A, B, and C) were observed. Each bird in a sample of size 36 was classified by species. The species data was then used to construct the pie chart below. Approximately how many birds in the sample were species C?



- A. 8
- B. 12
- C. 20
- D. 24
- E. 30

14. For which of the following variables would it be appropriate to construct a histogram?

- A. color of hair
- B. brand of stereo
- C. species of trees
- D. gender of an individual
- E. length of a phone call

15. Which of the following variables would have a distribution that is negatively (left) skewed?

- A. Number of text books in students' back packs
- B. Weights of strawberries
- C. Scores on an easy test
- D. Scores on a hard test
- E. None of the above variables would have a distribution that is negatively skewed.